

REMARKS

This Amendment, submitted in response to the non-final Office Action dated February 15, 2007, is believed to be fully responsive to the points of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-6, 8-19 and 21-26 are pending. Claims 1, 8, 14 and 21 are amended above. No new matter has been added. Claims 7 and 20 are cancelled above.

Claims 1-7, 12, 14-20 and 25 have been rejected under 35 USC 103(a) over US patent No. 6,341,153 (Rivera), in view of US Patent No. 6,205,239 (Lin). Claims 13 and 26 have been rejected under 35 USC 103(a) over Rivera, in view of Lin, in further view of US Patent No. 5,818,718 (Thomas). The Examiner indicated that Claims 8-11 and 21-24 contain allowable subject matter. Applicants respectfully submit the following remarks in support of the patentability of the claims.

1. Claims 1-6, 12, 14-19 and 25:

Claim 1 is amended above to correct informalities, for clarification and to include the additional recitations of original Claim 7. No new matter has been added. Claim 1 is directed to a method for identifying flaws in a part being inspected. The method includes generating a 3-d representation of the part, the 3-d representation comprising 3-d spatial coordinates corresponding to different locations on the part, registering the 3-d spatial coordinates with corresponding locations of the part being inspected, generating an image of the part being inspected, identifying a flaw in the part being inspected from the generated image, correlating a location of the flaw in the part being inspected to a corresponding 3-d spatial coordinate, and controlling a device to perform an operation on the part being inspected at the flaw location using information of the corresponding 3-d spatial coordinate. The method further includes identifying an approach vector that enables the device to contact and perform the operation on the part being inspected at the flaw location without obstruction from a portion of the part being inspected, and applying the approach vector to move the device to the flaw location without being obstructed by a portion of the part being inspected.

Claim 1 stands rejected under 35 USC 103(a) over Rivera, in view of Lin. Rivera is directed to a system and method for non-destructive examination of parts using three-

dimensional CT imagery. (Abstract) As noted in the Office Action, Rivera does not disclose controlling a device to perform an operation on the part being inspected at the flaw location using information of the corresponding 3-d spatial coordinate, as recited by Claim 1. Rather, Rivera teaches that the system can be utilized to conduct an inspection of electrical and mechanical components, perform failure analysis, do rapid prototype development, do current engineering of other parts relating to the product inspection, perform reverse engineering, and conduct research and development of new materials and processes. (Col. 3, lines 29-35)

Lin is directed to a system and method for circuit repair that includes capturing and preparing a digital-pixel based representation of the image, symbolically decomposing the digital-pixel-based representation of an image to create a primitive-based representation of the image, and analyzing the primitive-based representation of the image to detect and locate an anomaly. (See Abstract.)

The Examiner cites Lin as disclosing the step of controlling a device to perform an operation on the part being inspected at the flaw location using information of the corresponding 3-d spatial coordinate, as recited by Claim 1, and further as disclosing the steps of identifying an approach vector that enables the device to contact and perform the operation on the part being inspected at the flaw location without obstruction from a portion of the part being inspected, and applying the approach vector to move the device to the flaw location without being obstructed by a portion of the part being inspected, as recited by amended Claim 1.

Applicants have carefully reviewed the material in item 4, Fig. 2, Col. 22, line 65- Col. 23, line 12, and Col. 27 line 35- Col. 28, line 61 referenced by the Examiner and respectfully submit that Lin does not disclose identifying an approach vector that enables the device to contact and perform the operation on the part being inspected at the flaw location without obstruction from a portion of the part being inspected, and applying the approach vector to move the device to the flaw location without being obstructed by a portion of the part being inspected, as recited by amended Claim 1. These steps are discussed in the present application, for example, in paragraphs 35 on page 10 – paragraph 40 on page 12 with reference to Figure 4, which illustrates a collision avoidance process.

In rejecting original Claim 7, the Examiner relies on item 4, Fig. 2 and Col. 22, line 65- Col. 23, line 12 of Lin to supply these recitations. However, item 4 in Fig. 2 of Lin is merely a block labeled "DEFECT REPAIR" and the discussion at Col. 22, line 65- Col. 23, line 12 (copied below) is directed to a general discussion of automated defect repair and does not discuss collision avoidance, let alone teach identifying an approach vector and applying the approach vector, as recited in amended claim 1.

One use of the stated method of defect classification and diagnosis is to classify a detected defect as either repairable or not repairable, or "in tolerance" or "out of tolerance." The repairable or not repairable information, along with an image of the anomaly area and the detected defect, is integrated with information produced by a repair tool to produce a precise location and image of the repair and repair instructions for the repair tool. After the repair has been done, the automated defect repair system 4, (FIG. 2) captures an image of the repair, analyzes the repair to determine whether it has been correctly completed, decides whether to direct the repair tool to make another repair attempt, and may report the status of the repair to the yield management system 5 (FIG. 2).

In view of the above, Applicants respectfully submit that Claim 1 is patentably distinguishable over the cited art, either alone or in combination. Further, as Claims 2-6 and 12 depend from Claim 1, these claims are also patentably distinguishable over the cited art for at least these reasons. Accordingly, Applicants respectfully request that the rejections of Claims 1-6 and 12 under 35 USC 103(a) over Rivera, in view of Lin be withdrawn.

Similarly, Claim 14 has been amended to include the additional recitations of original Claim 20, now cancelled. Amended Claim 14 is directed to a part analysis system for identifying flaws in a part being inspected. The part analysis system includes, in part, a system control unit coupled to the imaging device and the storage unit, the system control unit including a processor and a memory comprising, in part, instructions configured to identify an approach vector that enables the device to contact and perform the operation on the part being inspected at the flaw location without obstruction from a portion of the part being inspected, and apply the approach vector to move the device to the flaw location without being obstructed by a portion of the part being inspected. Applicants respectfully submit that Claim 14 is patentably distinguishable over the cited art for reasons analogous to those discussed above with reference to claim 1. Further, as Claims

15-19 and 25 depend from Claim 14, these claims are also patentably distinguishable over the cited art for at least these reasons. Accordingly, Applicants respectfully request that the rejections of Claims 15-19 and 25 under 35 USC 103(a) over Rivera, in view of Lin be withdrawn.

2. Claims 8-11 and 21-24:

The Examiner indicated that original claims 8-11 and 21-24 contained allowable subject matter. Claim 8 has been amended to include the recitations of original Claims 1 and 7. Claims 9-11 depend from amended Claim 8. Claim 21 has been amended to include the recitations of original Claims 14 and 20. Claims 22-24 depend from amended Claim 21. In view of the above, Applicants respectfully submit that Claims 8-11 and 21-24 are in condition for allowance.

3. Claims 13 and 26:

Claims 13 and 26 have been rejected under 35 USC 103(a) over Rivera, in view of Lin, in further view of US Patent No. 5,818,718 (Thomas). Claim 13 depends from amended Claim 1 and is believed to be patentably distinguishable over Rivera, in view of Lin, for at least the reasons discussed above with reference to Claim 1. Similarly, Claim 26 depends from amended Claim 14 and is believed to be patentably distinguishable over Rivera, in view of Lin, for at least the reasons discussed above with reference to Claim 1.

The Examiner cites Thomas as disclosing an STL format. Thomas is directed to a rapid prototype modeling system (Abstract) and does not supply the above-discussed deficiencies of Rivera and Lin, with respect to independent claims 1 and 14. Accordingly, Claims 13 and 26 are patentably distinguishable over the cited art and Applicants respectfully request that the rejections of Claims 13 and 26 under 35 USC 103(a) be withdrawn.

In view of the above, Applicants respectfully submit that all of the pending claims, namely Claims 1-6, 8-19 and 21-26, are in condition for allowance.

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Please charge all applicable fees associated with the submittal of this Amendment and any other fees applicable to this application to the Assignee's Deposit Account No. 07-0868.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number below.

Respectfully submitted,

/Penny A. Clarke/
Penny A. Clarke
Reg. No. 46, 627

General Electric Company
Building K1, Room 3A72
Niskayuna, New York 12309
April 12, 2007
Telephone: (518) 387-5349